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REMARKS

Claims 1, 2, 5, 6, 7, 10-12, 14-16, and 18-20 are amended. Claims 4, 9, 13, and 17 are canceled without prejudice or disclaimer. No new matter is added by these amendments. Claims 1-3, 5-8, 10-12, 14-16, and 18-20 are pending. Applicant respectfully requests reconsideration and allowance of all claims in view of the amendments above and the remarks that follow.

Examiner Interview

Applicant acknowledges an interview between the Examiner and the undersigned attorney held April 10, 2006, during which the Office Action, claims, and references were discussed.

35 U.S.C. 112 Rejections

Claim 19 is rejected under 35 U.S.C. 112 as being indefinite for failing to particularly point out where to obtain the non-intent seize. Claim 19 is amended to recite that the obtaining comprises locking a gate in each of the plurality of the seize control blocks associated with each of the plurality of processors, which describes where the non-intent seize is obtained.

35 U.S.C. 101 Rejections

Claims 11-15 are rejected under 35 U.S.C. 101 as not being limited to tangible embodiments. The claims are amended to recite a storage medium, which is a tangible embodiment.

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Claim Objections

Claims 15 and 20 are objected to because "The claiming subject matter is a new lexicographer that was defined in the Specifications and are being examined and considered in the previous claims." Claims 15 and 20 are amended to recite that the intent seize is a less restrictive lock on memory than the non-intent seize.

35 U.S.C. 102 and 103 Rejections

Claims 1, 2, 6, 7, 11, and 16 are rejected under 35 U.S.C. 102(e) as being anticipated by Larson (U.S. Patent 6,578,131). Claims 3, 8, and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Larson. Claims 4, 5, 9, 10, 13-15, and 17-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Larson in view of Dias (U.S. Patent 5,161,227).

Applicant respectfully submits that the claims are patentable over the references because all of the elements of the claims are not taught or suggested by the combination of the references, as further argued below.

Claim 1 recites: "if a seize request for an address is an intent seize, finding a first hash table from among a plurality of hash tables, wherein the first hash table is associated with a first processor of a plurality of processors, wherein the first processor initiated the seize request, and wherein each of the plurality of hash tables is associated with a respective one of the plurality of processors."

Claim 1 further recites: "if the seize request for the address is a non-intent seize, finding a second hash table associated with a second processor of the plurality of processors, wherein the second hash table is designated for all non-intent seizures, regardless of whether the second processor initiated the seize request."

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Thus, claim 1 describes that hash tables are associated with respective processors, and, for intent seizures, the hash table that is used (the first hash table) is found based on the processor (the first processor) that initiated the intent seizure request. In contrast to intent seizures, claim 1 describes that one hash table (the second hash table) associated with one of the processors (the second processor) is designated for all of the non-intent seizures, regardless of which processor initiated the non-intent seizure request.

Larson

Larson recites at column 6, lines 42-43: "All processors 52(1)-52(N) use the same hash table 80." The single hash table of Larson, which is used by all of the Larson processors does not teach or suggest a plurality of hash tables, each associated with a respective processor, as recited in claim 1.

Fig. 5 of Larson illustrates that the single hash table 80 has multiple buckets 0 – M, and Fig. 7 of Larson illustrates that the single hash table 80 has multiple subtables 120(1)- 120(K). But, the Larson buckets and subtables are merely portions of the hash table 80 that are capable of being individually locked, as described at Larson, column 5, lines 1-15 and column 10, lines 45-54. Further, the Larson buckets and subtables are associated with data items whose keys hash to a common value, as described at Larson, column 4, lines 40-43 and column 10, line 67 through column 11, line 2. Thus, the Larson buckets/subtables are not associated with respective processors, and the particular bucket/subtable used is not found based on the processor. Hence, Larson does not teach or suggest the plurality hash tables associated with respective processors or the finding of a hash table from among the plurality of hash tables based on the processor that requested a seizure, as described in claim 1.

Further, Larson describes its locks as table locks (column 5, line 3), subtable locks (column 5, line 13), bucket locks (column 5, line 5), and spin locks (column 8, lines 25-26), so Larson has no notion of the intent versus non-intent seizures of claim 1. Thus, Larson does not teach or suggest the intent and non-intent seizures of claim 1.

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Hence, the single hash table of Larson that is used by table, subtable, bucket, and spin locks does not teach or suggest the first and second hash tables of claim 1, where the second hash table is designated for all non-intent seizures regardless of the processor that initiated the non-intent seizure, and the first hash table is found from among the plurality of hash tables and is associated with the processor that initiated the intent seizure.

Dias

Dias at column 4, lines 29-36 and Fig. 2 describes a lock manager LE1 30 coupled to subsystems 10a – 10p, which may be implemented as a processor or processors. Dias at column 4, lines 36-38, Fig. 1, and Fig. 2 further describes multiple lock managers LE2 35 implemented in each of the subsystems 10a – 10p.

Dias at column 5, lines 60-68 describes a hash table in the context of LE1 30: "LE1 30 maintains a list of lock entities which have been obtained by tasks running on the processors 10a through 10p. If a lock entity has not been obtained, then there is no entry for the entity in the LE1 lock table. In this example, the individual lock entities are arranged in hash classes and the list of locked entities is maintained using a hash table. To generate this table, the entity identifier of a lock is hashed using a conventional hashing function." Fig. 2 of Dias shows one lock table 212 and one global lock table 206, but no hash table.

Dias further recites at column 6, lines 64-65: "LE2 35 may use the same hashing function, $H(x)$, as is used by LE1 30 to maintain its table of locked entities."

If Dias is interpreted to describe a single hash table and a single hashing function that creates the hash table that are used by both LE1 30 and by all copies of LE2 35, then Dias does not teach or suggest the first and second hash tables of claim 1, where the second hash table is designated for all non-intent seizures (all non-intent seizures use the second hash table regardless of which processor initiated the non-intent seizure) and the first hash table is found from among a plurality of hash tables and is associated with the processor that initiated the intent seizure request.

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If Dias is interpreted to suggest that each copy of LE2 35 has its own hash table (despite the fact that all the Dias lock managers use the same hashing function), then Dias still does not teach or suggest claim 1 because Dias at column 6, lines 45-47, recites: "LE2 35 is a general lock manager. It handles all types of lock requests including exclusive, intent exclusive, share, and intent share." Thus, each Dias processor runs a lock manager LE2 35 that handles both intent locks (e.g., intent exclusive and intent share) and non-intent locks (e.g., exclusive and share). Hence, if each Dias processor has a separate hash table, then each of the separate Dias hash tables handles both intent and non-intent locks, which contradicts using a first hash table for an intent seize and designating a second hash table for all non-intent seizes regardless of the processor that initiated the non-intent seize request, as recited in claim 1.

Further, if Dias is interpreted to mean that each copy of LE2 35 has its own hash table, then combining Larson and Dias destroys the stated purpose of Larson, which is described at Larson, column 6, lines 52-55: "Part of the current solution involves cleverly using locks at various points and times in the hash table 80 to reduce or minimize lock contentions, thereby allowing more processors to access the table concurrently." The hypothetical combination of Dias and Larson results in multiple hash tables with each processor having its own hash table, which yields no contention for any one hash table and no concurrent access of any one hash table, which destroys the Larson purpose of allowing more processors to access a single hash table concurrently.

Thus, Larson and Dias, alone or in combination, do not teach or suggest "finding a first hash table from among a plurality of hash tables," do not teach or suggest "each of the plurality of hash tables is associated with a respective one of the plurality of processors," and do not teach or suggest "the second hash table is designated for all non-intent seizes, regardless of whether the second processor initiated the seize request," as recited in claim 1.

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Independent claims 6, 11, and 16 include similar elements as argued above for claim 1 and are patentable over the references for similar reasons. Claims 2-3, 5, 7, 8, 10, 12, 14, 15, and 18-20 are dependent on claims 1, 6, 11, and 16, respectively, and are patentable for the reasons argued above, plus the elements in the claims.

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Conclusion

Applicant respectfully submits that the claims are in condition for allowance and notification to that effect is earnestly requested. The Examiner is invited to telephone Applicant's attorney (651-645-7135) to facilitate prosecution of this application.

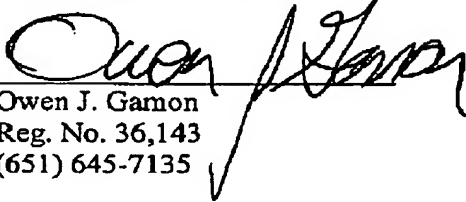
If necessary, please charge any additional fees or credit overpayment to Deposit Account No. 09-0465.

Respectfully submitted,

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By their Representative,

Date: April 12, 2006


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CERTIFICATE UNDER 37 CFR 1.8: I hereby certify that this correspondence is being transmitted via facsimile to the Commissioner for Patents 571-273-8300, on this 12th day of April, 2006.

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Signature